SIMBAD TAP service is evolving to simplify the usage for all users.

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SIMBAD TAP news

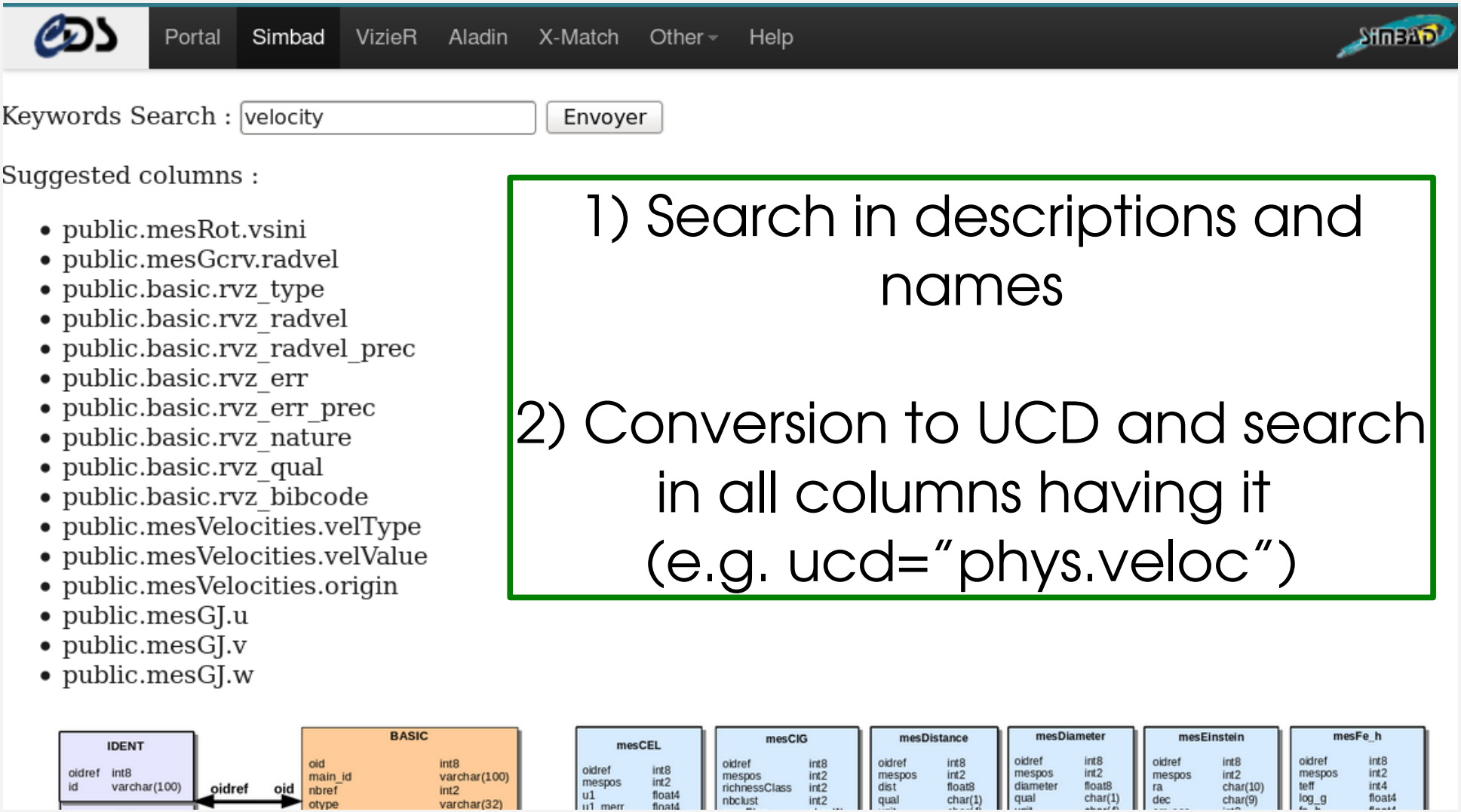
- **Search** keywords in tables
- Database **views** to replace subqueries/joins
- **Self generated** ADQL from a web query
- **Coverage** of a result (MOC)
- New TAPlib v2

... all available [now/soon]

SIMBAD TAP status

- **T**able **A**ccess **P**rotocol in SIMBAD is available since 2012
- About 120 users and 7000 queries per month in 2015
- 40 tables + 549 columns exposed

Search keywords in tables



Views replacing subqueries/joins

• Writing ADQL queries to get data of interest could be too complex, with many joined tables.

• Thanks to **views**, SIMBAD schema is **simpler** to understand and queries are simpler to write.

-> Usage of views will replace multiple subqueries or joins in ADQL queries.

Views replacing subqueries/joins

- **Concatenation** in the same field of all object types or identifiers

BEFORE

```
SELECT id2.id FROM ident as id1
  JOIN ident as id2 USING(oidref)
  WHERE id1.id = 'M44';

         id
--------------------
M  44
NAME PRAESEPE CLUSTER
NAME BEEHIVE
NGC  2632
Cl Melotte   88 [....]
```

NOW

```
SELECT ids FROM ident
  JOIN ids USING(oidref)
  WHERE id = 'M44';

                    ids
-----------------------------------
M  44|NAME PRAESEPE CLUSTER|NAME
BEEHIVE |NGC  2632|Cl Melotte   88
[....]
```

Views replacing subqueries/joins

- A new view composed of many **subqueries** to convert multiple joins in **distinct columns**

BEFORE

```
SELECT main_id,B.flux as "B", V.flux as "V" FROM basic
  JOIN (SELECT flux,oidref FROM flux WHERE filter='B') as B
    ON oid=B.oidref
  JOIN (SELECT flux,oidref FROM flux WHERE filter='V') as V
    ON oid=V.oidref
  WHERE otype='G..'  AND B.flux<4
```

```
      main_id       |  B   |  V
--------------------|------|-----
NAME SMC            |2.79 |2.2
LEDA 3129223        |0.754|0.895
....
```

Views replacing subqueries/joins

- A new view composed of many **subqueries** to convert multiple joins in **distinct columns**

NOW

```
SELECT main_id,B,V FROM basic
  JOIN allfluxes ON oid=oidref
  WHERE B<4 AND otype='G..';
```

```
      main_id       |  B   |  V
--------------------|------|-----
NAME SMC            |2.79  |2.2
LEDA 3129223        |0.754|0.895
...
```

Self generated ADQL from a web query

From SIMBAD web page results (like a query by coordinates), a new link helps the user to write the equivalent query in ADQL language :

Number of rows : 22 Plot

N	Identifier	dist(asec)	Otype	ICRS (J2000) RA	ICRS (J2000) DEC	Sp type	#ref 1850 - 2015
1	BD+36 4308	0.00	*	20 54 05.6889	+37 01 17.380	OB-e	4
2	TYC 2700-2084-1	64.82	*	20 54 00.321	+37 01 09.09	~	0
3	TYC 2700-2634-1	81.01	*	20 54 06.544	+37 02 37.74	~	0
4	TYC 2700-234-1	152.73	*	20 54 10.600	+37 03 38.34	~	0
5	TYC 2700-1136-2	197.61	*	20 53 49.191	+37 01 13.90	~	0
6	TYC 2700-1136-1	199.16	*	20 53 49.061	+37 01 14.74	~	0
7	ADS 14406	199.17	**	20 53 49.06	+37 01 14.7	~	2
8	1RXS J205350.2+365935	211.89	X	20 53 50.201	+36 59 35.02	~	0
9	TYC 2700-1024-1	235.64	*	20 54 14.825	+37 04 46.10	~	0
10	CCDM J20544+3704B	240.41	*	20 54 22.10	+37 03 35.9	~	0
11	TYC 2700-142-1	242.48	*	20 54 21.068	+37 03 55.15	~	0
12	BD+36 4310	261.93	*	20 54 18.2342	+36 57 42.864	K0	1
13	1RXS J205419.2+365737	273.42	X	20 54 19.198	+36 57 37.01	~	0
14	TYC 2700-118-1	278.76	*	20 54 22.482	+36 58 04.42	~	0
15	TYC 2700-974-1	279.28	*	20 53 45.146	+36 59 05.33	~	0
16	TYC 2700-170-1	310.67	*	20 53 49.0873	+37 05 16.167	~	0
17	TYC 2700-676-1	416.97	*	20 53 32.737	+37 03 32.30	~	0
18	TYC 2700-674-1	440.26	*	20 54 24.5389	+36 54 59.501	~	0
19	TYC 2700-1234-1	449.65	*	20 54 11.5618	+37 08 41.505	~	0
20	BD+36 4307	455.45	*	20 53 59.7889	+36 53 47.450	K0	0
21	IRAS 20526+3646	458.10	IR	20 54 39.3	+36 57 39	~	0
22	HD 199234	473.57	*	20 54 41.99631	+37 04 25.3506	A0	9

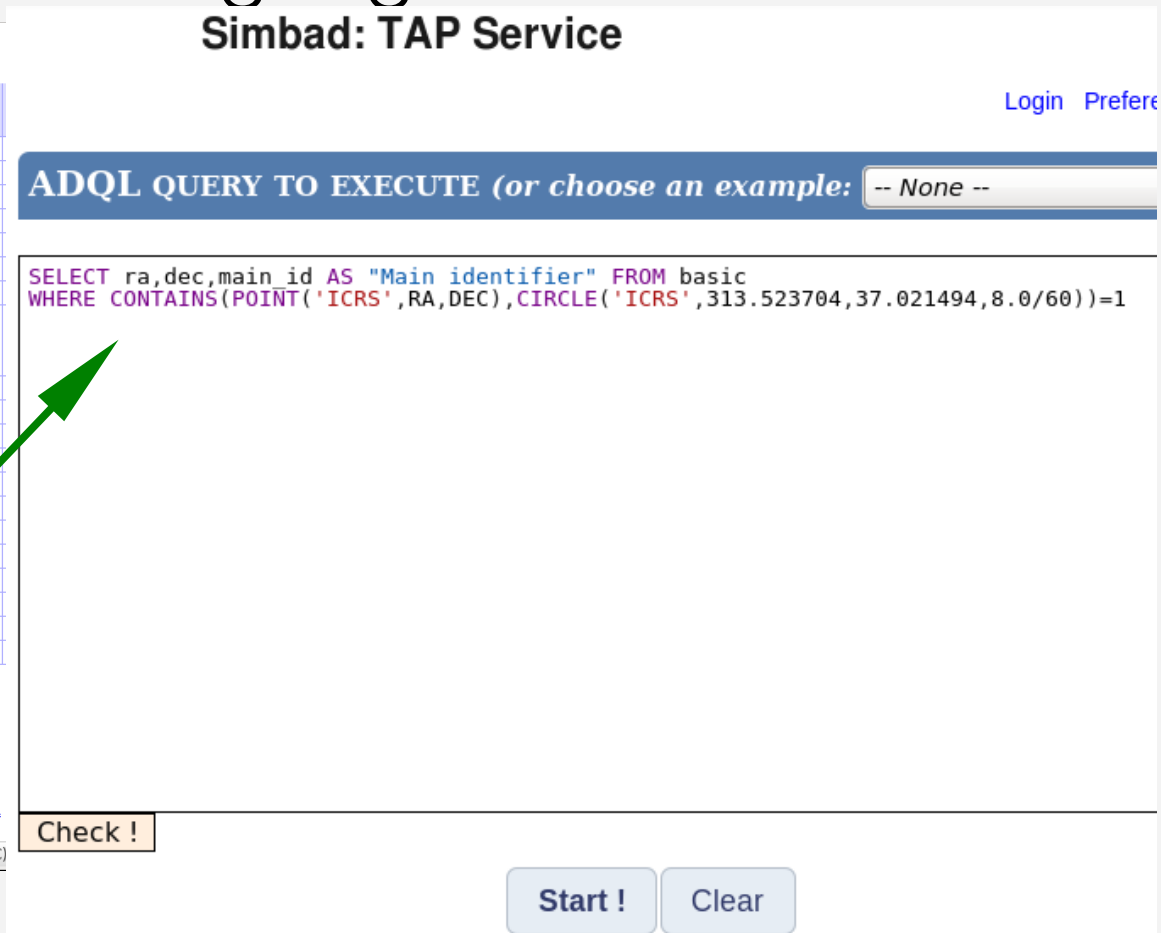
plot this list of objects ◉ Equat. ○ Gal ○ SGal ○ Ecl

Store this result in the CDS portal

Send this query directly in the database (TAP) try it in ADQL query

To bookmark this query, right click on this link: simbad:coo=20 54 05.689 +37 01 17.38,rad=8 arcmin
equivalent in the popup menu

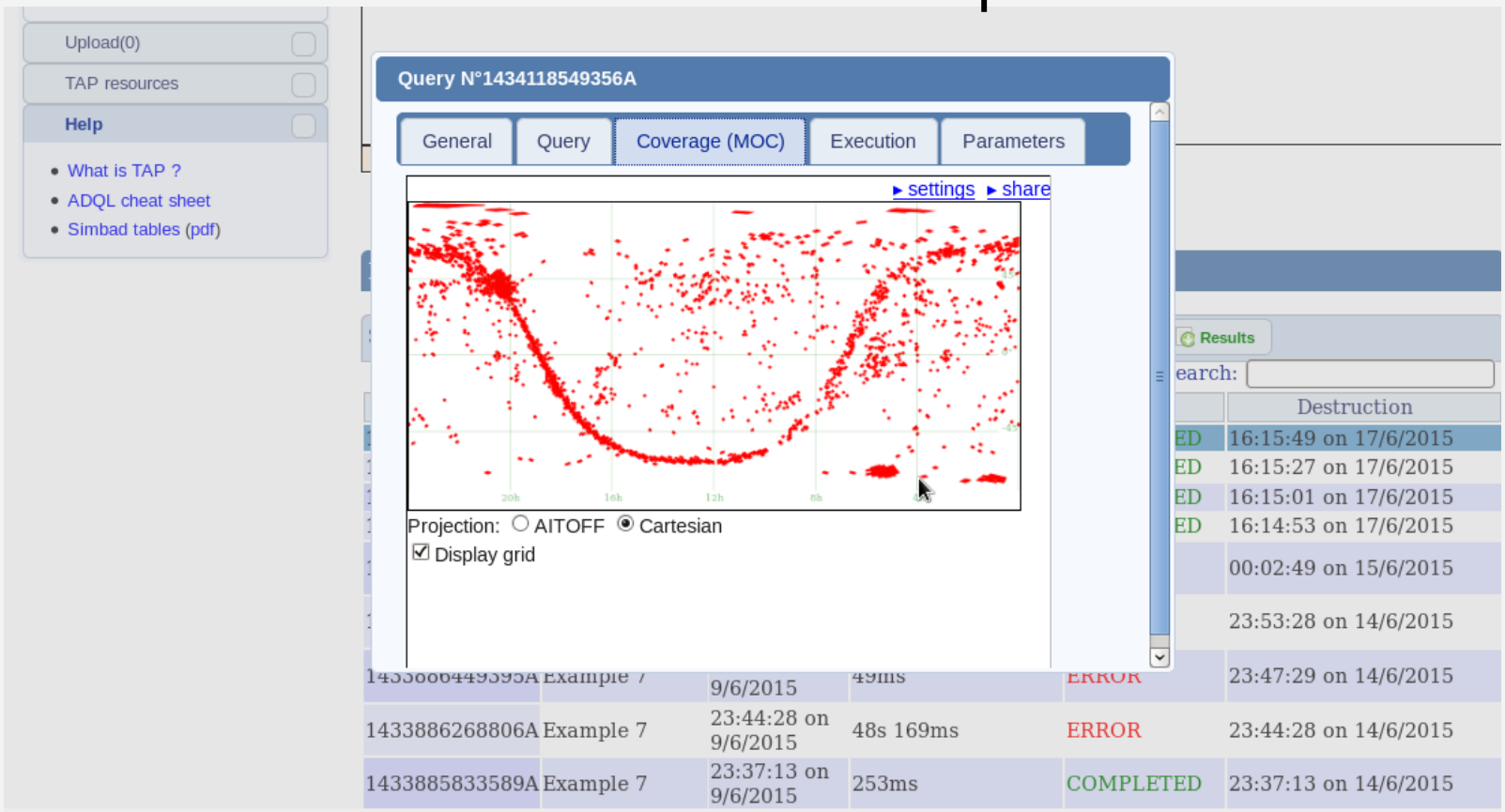
simbad.u-strasbg.fr/simbad/sim-tap/?txtQuery=SELECT+ra,dec,main_id+AS+"Main ...CONTAINS(POINT('ICRS',RA,DEC)



Coverage of a result (MOC)

The coverage of a query is available :

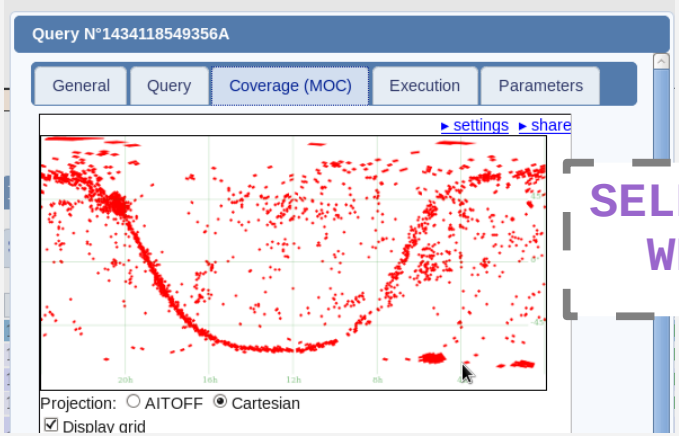
- Automatically in the properties of a job
  - As a new MOC "output" format



Coverage of a result (MOC)

Constraints :

- The query should use the table “basic” containing the healpix cell (the selected fields are ignored to generate the MOC).
- MOC is generated without limitation of output rows (on the initial ADQL query).
- Max resolution of 3.4' (order=10 / nside=1024).




```
SELECT ra,dec FROM basic
  WHERE otype = 'HII';
```

Near-term perspectives

- Currently SIMBAD TAP is being updated to the new version of TAPlib
  -> *see next talk by Gregory Mantelet*

- Assess how to provide pagination to get results step by step

- Show an interactive database diagram